JAN 22 1921
GENERAL LIBRARY
JAN 22 1921
UNIV. OF MICH.

THE JOURNAL OF PHILOSOPHY

VOL. XVIII. NO. 2: JANUARY 20, 1921

CONTENTS

A Conception of Philosophy: SARAH UNNA 29

Modern Logic and the Elementary Judgment: RUPERT CLENDON LODGE 42

Eddington on Einstein: E. E. SLOSSON 48

Reviews and Abstracts of Literature:

Bosanquet's Implication and Linear Inference: J. E. CREIGHTON. 52

Kirkpatrick's Imagination and its Place in Education: K. GORDON. 54

Journals and New Books 55

Notes and News 56

PUBLISHED FORTNIGHTLY

THE JOURNAL OF PHILOSOPHY

All communications to the Editors should be addressed to PROFESSOR FREDERICK J. E. WOODBRIDGE, or Professor WENDELL T. BUSH, Columbia University, New York City.

Subscriptions and advertisements should be sent to THE JOURNAL OF PHILOSOPHY, Sub-Station 84, New York City. The annual subscription price (twenty-six numbers) is $4.00 and the charge for single numbers is 20 cents. Advertising rates will be forwarded on application.

The Journal of Philosophy, is owned and published by Frederick J. E. Woodbridge and Wendell T. Bush, at Lancaster, Pa.

Entered as second class matter, January 19, 1904, at the Post Office at Lancaster, Pa., under Act of Congress of March 3, 1879.

Obras del Dr. José Ingenieros

NEUVAS EDICIONES CORREGIDAS POR EL AUTOR

La simulación en la lucha por la vida -	(11.ª edición)	$1.—
Simulación de la locura - - -	(8.ª edición)	2.—
Sociologia Argentina - - -	(7.ª edición)	2.—
Criminologia - - - - -	(7.ª edición)	2.—
Principios de Psicologia - - -	(6.ª edición)	2.—
El hombre mediocre - - -	(5.ª edición)	1.—
Hacía una moral sin dogmas - -	(2.ª edición)	1.—
Proposiciones - - - - - - - -		1.—
La evolución de las Ideas Argentinas	Vol. I (La Revolución)	4.—
Amhegino - - - - - - - -		1.—
Histeria y Sugestion - - - - - -		2.—

EN PRENSA:

Al margen de la ciencia (5.ª edición)

La evolución de las Ideas Argentinas Vol. 2 (La Restauración)

Editadas por la: CASA VACCARO-Avenida de Mayo 638-Buenos Aires

NOTA.—Se reciben suscripciones a la "REVISTA DE FILOSOFIA" que dirige el Dr. Ingenieros. Importe de la suscripcion anual, Interior $ 10m/n., Exterior $5 oro/s

Vol. XVIII, No 2. January 20, 1921

THE JOURNAL
OF
PHILOSOPHY

A CONCEPTION OF PHILOSOPHY

IT is with some misgivings that one embarks upon the adventure of telling philosophers what philosophy is about. It might prove as perilous as a similar attempt to disclose to artists the aims of art and the metaphysical implications of creative activity. Even though they should not take your words unto themselves—responding blandly "yes'm," or waxing indignant at some unintentional imputation (and I know not which is the worse)—there is always the possibility of their dismissing the whole matter with a shrug (which would be worst of all). And might they not be right? Why bother with a definition of art? It is the work of art which is important. Why define philosophy either? Why take so much trouble to explain what you are doing and why you are doing it? It's a sign of decadence!

And yet so much of the philosophy of to-day is engaged in defining itself—philosophy which breathes of a philosophical renaissance rather than of decadence. Of course, there is precedent for it. Plato it was, I believe, who began it, and in this respect at least there have been those who have not failed to profit by his example. Witness the numerous articles appearing in this JOURNAL. Philosophers do seem to find it necessary to talk about the function of philosophy. Bertrand Russell, for instance, begins his *Problems of Philosophy* by asking: "Is there any knowledge in the world which is so certain that no reasonable man could doubt it?" and elsewhere admonishes us against forgetting that "the philosophy which is to be genuinely inspired by the scientific spirit must deal with somewhat dry and abstract matters, and must not hope to find an answer to the practical problems of life." It is "the theoretical understanding of the world, which is the aim of philosophy."

Professor Dewey, as leader of the Creative Intelligenzia, voices their views somewhat differently: "Philosophy," he says, "claims to be one form or mode of knowing. If, then, the conclusion is reached that knowing is a way of employing empirical occurrences with respect to increasing power to direct the consequences which flow

from things, the application of the conclusion must be made to philosophy. It, too, becomes not a contemplative survey of existence nor an analysis of what is past and done with, but an outlook upon future possibilities with reference to attaining the better and averting the worse."

The New Realists, in their turn, inform us that their aim is among other things, the "correction of established habits of thought."

In this Russell, and Dewey, and the New Realists do agree, that most of the philosophy up to Russell or Dewey or Neo-Realism, as the case may be, has misconceived its function, and that if the claims of philosophers had not been absurd, their achievements would have been greater. And then each proceeds to explain what philosophy should be and what philosophers should do. And thereupon they cease to speak alike.

Now, I can not quite bring myself to the point of believing that most of the philosophy since Plato, or since Bacon, or even since Spinoza, has so completely mistaken what it was about. I wonder if there might not be five and forty ways of being a philosopher, as there are of composing tribal lays, and every single one of them—or almost every one—right, for a particular reason. And I wonder whether the reason for the rightness can not be expressed in some other way than by a weighing of evidence, a consideration of worth and of shortcomings, and an inevitable arrival at the irritatingly moderate conclusion that "there is much to be said on both sides."

I, too, would play the game of defining philosophy, not, however, as a prelude to the sudden production of any philosophical system or carefully unsystematized philosophy, as the case may be, which depends upon my definition; but rather as a protest that so much energy should be expended on preliminary flourishes, statements of policy—on polemics, in short—which might be used either in the organization of a body of scientifically philosophical truth, or in discovering and pursuing definite means for the improvement of the conditions of life here below.

For philosophers have, broadly speaking and in the main, divided in their view about the relative importance of these two types of philosophical activity. The line of cleavage has been particularly marked since what is generally viewed as the opening of the modern era in philosophy. Descartes and Spinoza, with their passion for clarity of thought, precision, and scientific certainty, are the intellectual forbears of such philosophers as Russell and the six Realists and the German logicians. And Bacon, in his radical protest against the formalism of Scholastic philosophy, and his declaration that knowledge means the power to utilize theory in the interest of

human life, is the not so very remote ancestor of Professor Dewey in his reaction against the idealistic formalism of Germany, England, and America, in his demand for a sweeping away of traditional philosophic problems whose genuineness is questionable, and in his emphasis on the necessary connection between concreteness of thought and activity which is to be *both* moral and successful.

In this paper I am not attempting to derive my definition of philosophy from a consideration of these two quite different notions of what philosophy should be. What I am trying to do is to set forth a conception of philosophy in terms of which both the instrumentalist and the scientific views of philosophy find a common, broader interpretation.

Let me recall to your minds the well-known view that philosophy is the attempt to evaluate the conclusions of the various sciences, "taking its material ready-made from the sciences," in Miss Calkins's words, "and simply reasoning about them and from them." According to James too "philosophy has come to denote ideas of universal scope . . . and the philosopher is the man who finds the most to say about them." The definition of philosophy as the science of sciences, and the figure of the wheel, with the sciences as the spokes and philosophy at the hub, come to mind at once. I believe, however, that the position of philosophy is at once more humble and more arduous. It may well begin, not with the aim of achieving an organization from above, of being inclusive, but of being exact in any small realm which it may choose to isolate. For when any sort of inquiry becomes self-conscious, looks about itself, and examines the assumptions on which it is proceeding, or considers its relations to any other human activity, it promptly turns into philosophy. Thus philosophy, as I understand it, does not reside permanently and peacefully at the hub of the wheel, but spends at least as great a part of the time as a wanderer along the rim, a traveler from spoke to spoke. There are frequent excursions hubward, it is true, and temporary surveys from this central vantage point. But sooner or later philosophy must return to its more humble position. Or, it might be possible to imagine philosophy as a dual personality, having the strange power of being in two places at once. At any rate, the figure of philosophy as a dweller on the periphery rather than at the center of the circle, does greater justice, I think, than the older view to the fact that a philosophy which is not intimately bound up with at least one important branch of human enquiry, which does not receive its impetus or take its departure from an intimate, vivid acquaintance with some specific science or art, so often seems futile and empty.

When philosophy is viewed as the attempt to discover and express the relationships between the various interests and activities of human life, certain aspects of the philosophic enterprise come to light. One is that philosophy is simply an intensifying, an amplifying, and a clarifying, of ordinary living, and that there is a perfect continuity between the most esoteric and abstract philosophy and common every-day experience. For both represent the constant and universal human demand for a consistent, organized experience, a perspective on life, so to speak. It is impossible for me to prove this by a description of the way in which meaningful experience begins and develops. I never was a baby, that I remember; none of the babies with whom I am acquainted tell their thoughts; and it seems even more futile to appeal to fox-terriers and earth-worms. But it might be illuminating to consider what really happens when an ordinary human being—not a philosopher, except in spite of himself—reads a novel, for example. He understands it in terms of his acquaintance with people; or he may bring to bear his knowledge of history, or of the social or political or economic conditions which it depicts or interprets; or of these conditions as its author's back-ground of experience and their influence on his ideas and his attitude toward life. He may relate it to other novels and other authors, with respect to its style, or its subject-matter, or just a few wayward and incidental notions which it may happen to contain. In other words, in proportion as the experience of reading that novel is rich and vivid and absorbing, it is a relating of the novel in as many ways as possible to the reader's background of experience. Sometimes—as in the case of one's first acquaintance with a Russian novel, for example, in which the technique and the subject-matter are relatively unfamiliar; or in one's first encounter with the German Romantic poets, or with impressionism in music or painting or verse, or with Japanese drama—the relating is not easily done, and sometimes necessitates the working over of a great part of the background against which the new experience is projected. In other words, our standards do change as our experience grows. And sometimes the new experience is rejected as comparatively meaningless, or at any rate temporarily unassimilable. But the rejection itself has meaning, and in this sense the experience *is* related to a more or less organized larger whole.

This tying up of meanings and memories extends right through the experience of every-day, from the tasting of a strange new breakfast food, to considering the prospective site for the town firehouse, or the advisability of sending missionaries to the Esquimaux. A new experience, in short, if it is at all intelligible is understood in

terms of a whole system of experiences, and is criticized in the light of it. The new experience is placed against a background of principles or presuppositions, the residue of a tentatively organized past in a similar attempt to make a whole of conscious life. And often, as I said before, it is impossible to assimilate the new experience without adjusting or reworking the background, and changing at least some of the presuppositions.

When the reader of novels or the listener to music or the viewer of paintings, becomes conscious of what he is doing, does it deliberately, and publicly voices his opinions, we call him a critic. And, not immediately, perhaps, but in the long run, I think, we call his criticisms good just to the extent to which they furnish *us* with a technique, however imperfect, for the organizing, however tentative, of similar experiences—and, of course, by differentiating, of contrasting ones.

Now, the philosopher, I take it, consciously or unconsciously is trying to do for some or all of the experiences[1] and activities and values of life what the literary critic, for example, is or ought to be trying to do for literature—that is, trying to discover their relationship to the other experiences[1] and activities and values of life, and perhaps to life as a whole. He is a Critic, in the most complete and general sense of the word. For criticism is simply a consideration of things in their relations to each other. When you criticize a thing, you view it in the light of another fact or group of facts, and try to formulate the relation between them. For criticism is not evaluation, if evaluation be taken to mean putting a value on something which is originally negative or inherently valueless. Values are spontaneous, as much given as the greenness of the grass, or the hardness of granite, or the shortest distance from here to San Francisco, or the perplexing circularity of Columbia Library. These things are not created by our experience. They are discovered. And similarly we do not create values. We discover them. It is perfectly natural that we should prize health, and comfort, and clear cool air, and friendship, and good-tasting food, and economic independence, and beautiful paintings, and courage, and the satisfaction of curiosity. The important thing is to see them in their relation to each other, to achieve a perspective. And the attempt to attain this perspective we call philosophy.

Emphasis is often laid on the valuing aspect of philosophy. The relationship between values (with the stress on values rather than on the relating of them) is, I believe, often taken to be the

[1] The term "experience" being used to include the experience of fact in the realm of physical or logical "structure."

special field for the philosophy. The moral or the esthetic judgment, at first blush, does seem inevitable for work of philosophic significance. Yet what I feel I have not sufficiently made clear is that it is the relating, carried on in the most rigorous and thoroughgoing manner, which is the keynote of philosophic activity. The relating of values is only one phase or branch of this activity. Values are inevitably dealt with if the enterprise of relating be carried far enough. The value judgment does enter into philosophy, just as it does into the experience of reading a novel or a poem. But the relation of better or worse than something else, is only one of the relations discovered and articulated in that illuminating and rationalizing of experience which *is* philosophy. The desire to see things clearly and whole does include the wish to know the relative importance of this or that fact or endeavor in the light of human life as a whole. I think it is worth while, however, to emphasize the fact that *any* step in the process of integrating experience, so long as it be a conscious, rigorous attempt to see one thing in the light of another, may rightly be called philosophical. Not logic only, but all philosophy is a study of relations.

Such a view of philosophy is much more pluralistic than the older classic view. It gives the title of philosopher to those of less Protean capacity than the philosopher is usually supposed to exhibit. Whether or not it is possible to achieve any permanently significant conclusions from a consideration of, say, the relation of poetry to push-pin, or of economic conditions to standards of achievement, or of a novel to a political theory, without dealing with *all* the values of life and a general conception of life to boot, may be doubtful. But the question itself, as I see it, is not the crucial one. However far the philosopher may find himself driven toward inclusiveness as his enquiry proceeds, he is as much engaged in the pursuit of philosophy at the beginning of his task as later, a philosopher as well when he is engaged in discovering the relation of one science to another (of the methods and aims of history to those of anthropology, for instance), as when he is dealing with the significance for conduct of the theory of evolution, or with the relations of the great value groups—the beautiful, the true, and the good.

This means that philosophy is bound up with science, just as it is fused and interpenetrated and continuous with every-day living and with the esthetic experience. If, as Spencer says, "Philosophy is completely unified knowledge," then we have no philosophy at all. But if philosophy be the attempt to achieve a more complete unification of knowledge than we have at present, then philosophy is one phase of science and of art and of common experience. It is en-

lightening to recall the fact that among the ancients science and philosophy were largely identified. The mathematician was the philosopher, and the philosopher was the physicist. For to them philosophy was simply an intelligent attempt to understand the world in which we live. The philosopher, according to Plato, was one who knew "the true being of each thing." Even when one reads the history of the philosophy of not so very ancient times, he frequently finds it difficult to decide whether he is studying philosophy or science. And in spite of the growing tendency of the scientists and the philosophers to hedge off porcupinely from each other, I should say that the difficulty exists even to-day. Is Bertrand Russell a philosopher when he is criticizing the primary concepts of number, or when he is engaged in the attempt to reduce mathematics to logic (*i.e.*, when he is relating these sciences)? Or is he a philosopher only when he is considering the subject of mathematics itself as one interest among others that human beings pursue, and expressing a judgment as to its supreme value and beauty. Or is it only when he is giving an interpretation of the meaning of life as a whole, as in *The Free Man's Worship*? And what of logic and metaphysics themselves? Are we to consider them sciences or branches of philosophy? Their classification seems to me to be rather arbitrary, on the whole, depending to a great degree on your point of view and your native or acquired predispositions. If exactness of detail in the description of "structures" (to use Professor Woodbridge's term) be the mark of science, then logic, without a doubt, and metaphysics in proportion as it becomes exact, are sciences. But then esthetics, and even ethics—very slowly, perhaps, but none the less surely—are also on their way to become sciences. There seems to be a grain of truth in the cynicism that philosophy is nothing but bad science. It is a curious and rather pathetic situation for philosophy, that the results of the philosophic pursuit of relations, just to the extent to which they become exact and indisputable, are constantly being taken over by one or another of the sciences. And one by one mathematics, physics, astronomy, biology, psychology, and latest of all sociology, have left the philosophic roof-tree and gone off on their own, so to speak.

Yet the situation, rightly viewed, is not so discouraging for philosophy, after all. It simply means that a relation which is more or less completely determined and known may at times and according to one's point of view assume the status of a fact; and that any group of such clarified and interpreted facts, tentatively organized in the light of some determining principle or group of principles, is what we mean by a science.

There is no one region of philosophic fact, and no peculiarly labelled, quite indisputably philosophic problems. Philosophy takes its material to be criticized and reorganized wherever it may happen to find it. And however many young sciences go forth from the philosophic roof-tree, the house itself will never be empty so long as science finds anything left to discover and describe. What is more, there is a constant, if often unpremeditated returning, as it were, of the sciences to the house of philosophy. For the moment mathematics, for example, raises its head from the contemplation of its own particular discoveries and considers its relation to logic or music or chemistry or the Beautiful, that moment it turns into philosophy. And the moment the economist or the lawyer or the politician articulates to himself the place of his particular occupation in any larger setting, he becomes a philosopher. Philosophy is found not only above, "relating the big conclusions of the various branches of science," but right within the fields of the sciences. The two are mingled and interpenetrated. One might express their relationship by borrowing a figure from Professor Montague, but using it in a different connection. The line of chalk on the blackboard is something more than an infinite number of points. These chalk-specks are arranged linear-fashion. And the arrangement is as real as the chalk-bits. Only, to have a *chalk*-line on the blackboard, you must have both the infinite number of chalk-bits *and* the linear relation of them. One can not get one without the other. So with the relation of science and philosophy. The scientific enterprise *is* philosophical, just in so far as it is a "progressive integration of experience," to use a phrase of Santayana's.

This progressive organization, with the relating of interests and activities of every sort, makes intelligible the notion of different levels, as it were, of philosophy—of philosophies "of a higher order," just as there are "propositions of a higher order," to use Bertrand Russell's expression. And for the philosophies as for the propositions, the term *higher* carries no laudatory connotation whatsoever. It is simply a fact that the social sciences, for instance, are on a different relational level than the natural sciences, inasmuch as the social sciences themselves represent a wider, more comprehensive, more complete integration of interests and a partial evaluation of human activities. That is, with respect to their subject-matter they are on a different philosophical level than the natural sciences. And in a like manner, in the consideration of the relationship of the beautiful, the good, and the true, or in the criticism of the critical activity itself as one type of interest among others, we have philosophy on still higher levels—always bearing in mind

the perfectly neutral sense, so to speak, in which the term *higher* is used. An infinite regress in the discovery of relations and interrelations and relations between relations, *is* set up. But then, the effect of an infinite upon you depends on your own attitude toward it.

But, you cry, isn't this all fantastic and absurd? What you are doing is not distinguishing and defining philosophy, but obliterating distinctions, stretching the term philosophy to include things with which it never dreamed of being associated. "If," as Professor Morris Cohen points out, "the Holy Sepulchre be everywhere, one can not effectively preach a crusade to redeem it from the infidel." Now, I believe that it is absurd to make such an extension in the use of terms that all distinctions are smothered under a blanket of inclusiveness. But I believe it is equally absurd to make distinctions where none exist in fact. Far truer than our present-day contrasting of science and philosophy, was the older distinction between "natural philosophy" and "moral philosophy," and I wish we might return to it. After all (if one could accomplish the feat without resembling too absurdly the glib narrator who piquantly ends his story in the fashion just opposite to the expectation which he had carefully aroused—a "sell," I believe it is technically termed) one might be tempted to voice one's wonder whether the supposedly indubitable importance of a distinction between science and philosophy might not be the result either of a too-jealous clinging to traditional and sometimes outworn philosophic problems and prerogatives; or of a not-quite-nicely balanced sense of values—a proverbially philosophic lack of humor might be another way of putting it. One might be tempted to wonder what difference it makes, after all, whether a problem be a problem for science or a problem for philosophy, so long as the problem itself be a genuine and significant one. And whether it is so tremendously necessary that we have any definition of philosophy, even though courses purporting to introduce us to the subject have still to be given. For philosophy, so far as I can see, is simply that love of wisdom of which Plato speaks. He might have added that the philosophic person is much more important, in the long run, than the philosophic problem. It might be a good thing, practically, if philosophers and scientists and artists forgot to argue about the function of philosophy and science and art, and devoted themselves to the discovery of things that are *so*, in whatever portion of the discoverable universe, natural or moral, most happens to interest them—whether it be the realm of mass and weight, or of logic, or of values, or of musical combinations, or of the reasons and the validity of stand-

ards of judgment themselves, or of the relation of any of these to any or all of the others.

And it is just this sort of thing that philosophers used to do. Most of them up until the time of Socrates were engaged in criticizing our notions of the physical world. It is true, they had a weakness for trying to solve all the problems of the nature of man and of the universe according to a single formula, and we smile at them—and do the same things ourselves, at least those of us who are idealists, or Freudians, or vegetarians, or Guild Socialists, or believers in New Thought. It is true also that the pre-Socratics sometimes tried to solve physical problems dialectically, poor souls. But the genuine philosophic impulse was there, the impulse to understand things in terms of each other; only, in the case of the Pythagoreans, for instance, the impulse was to understand everything in terms of their experience of number.

With the Sophists, philosophy takes the form of a criticism of the standards of morality and social life. Socrates continued this criticism, only with more rigor and honesty, criticizing as well the skeptical and individualistic tendency of the Sophists. His uncompromising demand that we say what we mean and mean what we say, led him also to demand that we criticize the concepts we employ, and find out what we mean by such notions as piety, justice, moderation, courage, cowardice and other terms whose meanings we usually take for granted.

Plato extended the Socratic criticism to cover the entire social life, which he judged according to ideals of human life and conduct which were themselves criticized.

We hear so much about the "critical" philosophy of Kant; and yet, so far as I can see, all philosophy is critical by reason of its very nature. When it is not, we call it poetry, or, if we are *very* severe in *our* criticism, or happen to have been particularly irritated by it, we call it dogmatism. It would be vain to attempt to trace even the main currents of the critical movements through its history, showing in what ways and in what various fields the critical activity has manifested itself. I shall simply point out a few of the interests of philosophers of the present day.

William James was chiefly interested in relating the results of investigation in the realm of the biological sciences to conduct, and in pointing out what he supposed to be the consequences for theoretical knowledge. The occupation of many of his and our contemporaries has been to criticize his methods and his conclusions. James's other main interest was the psychological warrant for religious faith.

Among living philosophers, Santayana is chiefly interested in criticizing the various values of life in the light of their relation to each other and to a conception of human life, which in turn he has tested in its relation to fact, to logic, and to practise. Incidentally, he is criticizing other philosophers and other attitudes toward life both logically and on the ground of their implications for the whole of life. His *Life of Reason* is a critique of human life in which science and art and religion and the social values are viewed, each in its relation to the other values of human life.

Bertrand Russell's interest in science is of a very different sort from that of Santayana. His earlier work is primarily concerned with problems of scientific method in their relation to logic. In his later social philosophy he is dealing with the relation between ideal and practical needs, with the relation of expressions of impulse to a satisfactory life and its conditions. He is engaged in describing the relations between economics, politics, education, industry, instinctive human nature and human ideals.

Poincaré, the great French scientist, becomes a philosopher when he examines his pursuit with the purpose of finding out just what it is he is doing. Like the earlier Russell, he is interested in discovering the interrelations of the various sciences and of analyzing their ultimate concepts. He is a philosopher on a different level, so to speak, when he steps aside to talk about the whole enterprise of science in its relation to the other phases of human activity and the place of the scientific and the practical interests in human life.

Sometimes the philosophical critics deal with the values of life in their relation to some special interest or some particular concept. Thus Mr. Laski is interested in criticizing the concept of sovereignty and of the state. Dean Pound is dealing with the nature and basis and ideal of law. The relation of the state to economic and industrial groups is the chief concern of the political philosophers of England and France, and lately of America—such men as J. A. Hobson, G. D. H. Cole, A. R. Orage and others of the Guild Socialist movement in England, and Duguit, Durkheim, Levine, and Sorel in France—to mention only a few.

Professor Dewey is interested in criticizing the values and activities of life, and the rôle of philosophy in life, particularly with reference to conduct and the improvement of the conditions necessary to a satisfactory life. "What serious-minded men not engaged in the professional business of philosophy want most to know," he says, in his essay on "The Recovery of Philosophy," is what modifications and abandonments of intellectual inheritance are required by the newer industrial, political, and social movements. They

want to know what these newer movements mean when translated into general ideas. Unless professional philosophy can mobilize itself sufficiently to assist in this clarification and redirection of men's thoughts, it is likely to get more and more side-tracked from the main currents of contemporary life." It is in the light of his conception of the rôle of philosophy in life that he questions the genuineness of traditional philosophic problems.

Thus, broadly speaking, the types of philosophy depend on the types of subject-matter dealt with. The line of cleavage, as I have noted, is between the "social" and the "scientific" philosophies. A recognition of the fundamental similarity of their enterprise would, however, do much toward clearing the intellectual atmosphere. Since Aristotelian completeness is an impossibility to-day, philosophers, if they are to accomplish anything of real importance, must of necessity be partial in their endeavors. The remedy for the possible evils of philosophical partiality is not a vain attempt to be all-inclusive, but rather wholeness of vision, a recognition of the relation of one type of philosophical activity to another.

By this I do not mean that every aspect and tenet of either philosophical humanism or philosophical intellectualism is equally acceptable or valid. But a philosopher may be a philosopher even though he make mistakes. What I am speaking of is the status of the different types of philosophical interest. Each is equally relevant to human life (an irritatingly moderate conclusion, I know), provided that neither commits the cardinal philosophical sin of taking itself, in its partiality, to be the sum of philosophy. So that when one considers human needs and values as somehow not inclusive of intellectual needs and values, he is making as vicious an abstraction as one who fails to remember that "the sincere dialectician," to use Santayana's words, "must stand upon human, Socratic ground."

By this I do not mean that everything that is being done in philosophy is quite as important as everything else. Some interests and some values *are* more fundamental than others. This itself is a philosophical question. I only mean that philosophy is philosophy on whatever level it is found. All criticism is not equally important. But it is all critical.

And, as I tried to make clear, to say that philosophy is criticism does not mean that philosophy is in any sense an evaluation from above. Philosophy is not the construction of ends, but the discernment and relating of them. And this illuminating and ordering of ends is only one phase of the Life of Reason, the "progressive integration of experience" in the attempt to satisfy an instinctive and

persistent craving for consistency in experience—in pure knowledge, as it were, and in conduct, and between the two. In Santayana's words (once again), "To understand is pre-eminently to live, moving not by stimulation and external compulsion, but by inner direction and control." The demand at the basis of the whole enterprise is, I believe, an esthetic demand, a passion for order and harmony and lucidity. The final test of a philosophy, I believe, is its power to satisfy this demand.

But is this not turning philosophy, or criticism, over to subjectivism and intellectual anarchy? If there are no objective standards of judgment—why then argue about a novel or a painting or a social theory or a philosophy of life? In matters of taste there can be no disputing. I do not believe, however, that such an interpretation of criticism means consigning it to the depths of "mere" impressionism. What the critics of the theory of the esthetic bias in the philosophic enterprise overlook, is that few human beings knowingly and willingly play the fool, even though it be the blessed fool, for the comfort of a superficial synthesis. The "will to believe" is not so strong as that. What they also overlook is that experience is not wholly a sub-cutaneous phenomenon. Why argue? Simply because conversation is a means of discovery. It is possible for human beings in some way or other to share and discuss and criticize each other's ideas. The mere existence of language bears witness to this. But this in turn implies a common ground as the possibility of such communication—namely, the obligation of every rational being as a rational being to endeavor to avoid contradicting himself.

What this means, in terms of criticism, is that a man has a right to his standards for interpreting his experiences, of whatever sort they may be, just so long as he finds them adequate, just so long as he can maintain them consistently against all comers—and against himself. An impressionism such as this, if this *be* impressionism, is curiously plastic under the pressure of logic and of fact.

SARAH UNNA.

COLUMBIA UNIVERSITY.

MODERN LOGIC AND THE ELEMENTARY JUDGMENT

MY suggestion to exclude the term "elementary judgment" from modern logic, so as to avoid serious confusion with the *S is P* proposition in traditional logic,[1] has met with certain criticisms[2] which are of sufficient importance to require an answer, especially as my critic's position—he seems to have fallen into the very confusion against which I am protesting—appears to be fairly typical for many students of logic. As my earlier paper failed to remove certain grounds for this typical misunderstanding, I shall in what follows, first re-state what I take to be the fundamental positions (1) of traditional logic, (2) of certain partly modern logicians, and shall then state (3) the position which should, in my opinion, be taken by all modern logicians in accordance with the essential principles common to the whole movement. Having in this way made clear both what is included and what is excluded from modern logic, I shall then proceed to give concise answers to each of the contentions urged against me by my critic.

I

1. Traditional logic recognizes a distinction between simple and complex propositions, *e.g.*, between (*a*) propositions of the form *S is P*, and (*b*) propositions of the forms *S is P and Q is R. If S is P, Q is R. Either S is P or Q is R, etc.* Compound or complex propositions are so called, because, for certain purposes, they can be analyzed into two or more simple or elementary propositions connected in a special way.[3] Along with this distinction between propositional forms, goes a secondary belief that logical thinking, which expresses a relation between the ideas *S* and *P*, is an apprehension of "corresponding" relations between real entities. That is to say, the traditional logician tends to regard reality as a system of entities, *s, p, q, r, etc.*, between which relations of inclusion or exclusion (*is—is not*) hold, and that these relations can be clearly apprehended and expressed in the traditional propositional forms. This belief is known as the "existential import of the copula."

[1] This JOURNAL, XVII., pp. 214 ff. The proposed exclusion is in the interests of intellectual clarity, and is in no sense an attempt to banish awkward psychological or logical *facts*.

[2] See L. E. Hicks, *Shall We Exclude Elementary Judgments from Logic?* This JOURNAL, XVII., pp. 493 ff.

[3] For certain purposes, this kind of analysis appears to me to be perfectly legitimate (*Cf.* my *Intro. to Mod. Logic*, p. 9), and I do not understand what Dr. Hicks means by calling traditional logic "moribund" (p. 494).

2. Modern logicians recognize a distinction between infra-logical thinking[4] and reflective or logical thinking. This is essentially a distinction between psychological and logical, and has nothing whatever in common with the traditional distinction between simple and complex propositional forms. Certain partly modern logicians[5] place the propositional-form distinction (of simple and complex) under the head of "logical," excluding it entirely from the "psychological" side of the modern distinction.[6] It should be added that Wundt and Erdmann, and perhaps also Sigwart, regard the distinction between simple and complex propositional forms as coinciding with a distinction between judgments as elementary and critical or reflective, respectively.

On the question of existential import there is an entire *volte-face* in modern logic. Reality is no longer envisaged as a system of entities between which simple relations of inclusion and exclusion hold—which relations can be simply apprehended and expressed in *S is P* judgments,[7] but rather as a highly complex system of relations, the discovery of which furnishes problems of almost infinite complexity to our various departmental sciences. This is expressed by Lotze in his arrangement of certain well-known propositional forms in the order, *S ought to be P, S may be P, S is P*, where *S* is *P* represents the final establishment of a hypothesis, and is anything but an elementary or primal judgment. This view is characteristic of the modern movement taken as a whole, and the function of logical thought is generally regarded as the experimental establishment of hypotheses, which, until established, have the status of "floating adjectives."[8]

To make still clearer the comparison between traditional and modern logic on these points, the above statements are summarized in the following diagram.

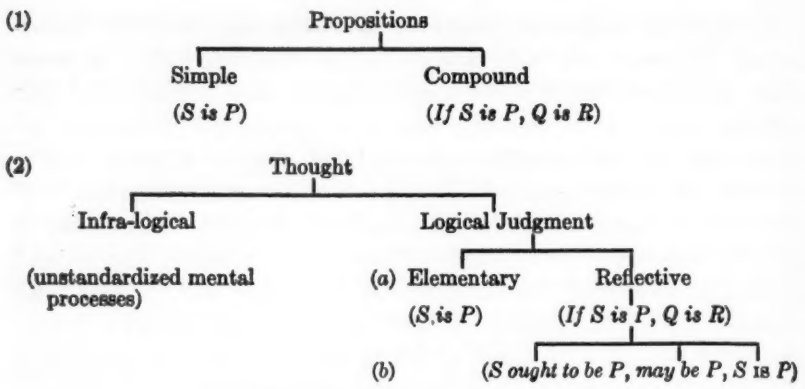
[4] *E.g.*, processes involved in sense-perception, association, memory, emotion, *etc.*, which, while subsidiary to logical processes, are themselves, as such, infra-logical (Sigwart, Erdmann, Wundt, Ziehen).

[5] *E.g.*, "Concinnists"—from *concinnare*, a term proposed by Ziehen—such as Wundt and Erdmann.

[6] Thus, it would be a serious blunder to identify the propositional form *S is P* with the psychological, infra-logical experiences, out of which the *standardized* thought-process which constitutes logical judgment arises.

[7] Certain exceptions must be noted. Husserl and his followers, such as Professor W. T. Marvin, hold that the logical intelligence apprehends certain very general, "noetic" relations, which hold good for all judgments, and Erdmann thinks that we apprehend relations which are "logically immanent" in the real world.

[8] *Cf.* Bradley, *Principles of Logic*, Ch. I.: Sigwart, *Logic*, Ch. IV.



3. It seems to me that there is a dangerous ambiguity in the position of many modern logicians, and in particular that their view of "existential import," which assigns the *S is P* form to the *end* of the series which culminates in an approximation to completed judgment (2*b*), is hardly consistent with the "concinnist" attempt to retain the *S is P* form for the "elementary" as opposed to the "reflective" judgment (2*a*), and this would seem, as Dr. Hicks points out (p. 494), to assign the *S is P* form to the *beginning* of the series. We might speak of a lower and a higher categorical form, to mark the distinction between the preliminary and the more final form of judgment, but the danger of confusion is sufficiently apparent, and the further possibility of confusion with the *S is P* proposition of traditional logic, and even with the elementary, infra-logical processes recognized by modern logic, is, as a consideration of Dr. Hicks's treatment of "primal' or "elementary" judgments (pp. 494, 497–8) itself indicates, not to be disregarded.

The confusion in question seems to me to arise mainly from the "concinnist" attempt to find a place for, and to incorporate in modern logic, the formal distinction between simple and compound propositions. This distinction, which is of great importance to traditional logic, is without significance for characteristically modern logic, and can be entirely omitted, not only without loss, but with distinct gain in clearness and avoidance of confusion. It was for this reason that I suggested, in my earlier paper, that traditional and modern logic should be kept separate, and that the term "elementary" judgment, as represented by the *S is P* form, should be abandoned, as it tends to introduce confusion between (a) the simple proposition of traditional logic, (*b*) the infra-logical experiences out of which our clear-cut, standardized judgments arise, according to modern logic, (*c*) the simpler types of judgment,[9] and

[9] For confusion between (*b*) and (*c*), *cf.* Dr. Hicks's paper, pp. 494–495.

(*d*) the final ideal of judgment in modern logic. It tends further to introduce confusion between the naïve confidence of traditional logic and the scientific skepticism of modern logic (*cf.* Hicks, p. 497).

In making this suggestion, I would rest especially upon the work of Bradley, Bosanquet, and (recently) Ziehen. I would insist upon the value of the distinction between infra-logical processes and standardized thought. All standardized or logical thought I would regard as critical or reflective, and would insist that the substitution of experimental verification of hypotheses, recognized as such (in place of the naïve faith that "S *is* P"), is essential to the modern position, and that the importance of this explicit recognition of tested and standardized thinking is so great as to justify and necessitate the rigid exclusion of elements likely to re-introduce the naïve distinctions whose place is properly in traditional logic.

Modern logic includes all standardized thinking, as such, and necessarily involves a systematic study of the intellectual standards employed in such thinking, *plus* a brief description of the infra-logical processes, and a contrast of infra-logical with strictly logical and reflective thinking. In virtue of the contrast thus established, it excludes from logical study all further investigation of these psychological processes (except, perhaps, in the chapter on fallacies), and establishes the ideal of a thinking which shall be consistent, systematic, and thorough, as reflective and as critical as possible. It also excludes all consideration of traditional logic, with its characteristic distinctions and problems, as foreign to its own purpose, and as likely to cause confusion.

II

From the position thus outlined, I will give concise answers to Professor Hicks's detailed criticisms.

1. Dr. Hicks thinks that, if only *Beurteilungen* are admitted into modern logic, then concepts, identifying judgments ("That is a cow"), and many inferential judgments ("Yonder is fire"), will necessarily be omitted (pp. 494–5). Thought is a continuous process, and a line can nowhere be drawn, so that not only perceptual and many experiential judgments would be omitted, but eventually (in view of Bosanquet's contention that ideally there is only one judgment) "all human judgments would pass under the knife" (p. 496). My answer to this criticism is: There were, perhaps, grounds in the previous paper which make this misunderstanding possible. From the present standpoint, "judgment" being understood as a human approximation to the one absolute

judgment, *all* judgment, so far as we really *judge, i.e.,* so far as our thought conforms to the standards of identity, difference, and organization, is included. This is true not only of symbolic and transcendent judgments, but also of perceptual and experiential judgments. What is excluded is the vague experiences of infra-logical character which have not yet been raised to the intellectual level.[10]

2. Dr. Hicks thinks my treatment of the reflective level "unique," and my contention, that its acceptance renders insignificant the distinction between simple and compound propositions, inconsistent with the practise of "most logicians," who retain the elementary judgment as well as the reflective level (p. 496). To this I answer that the criticism is partly grounded. Wundt, Erdmann, and other partly modern logicians do attempt to retain both the reflective level and also the distinction between simple and compound propositions. My objection to this attempt is stated above —I. (3). My treatment is not "unique." It rests largely upon the work of Bradley and Bosanquet in showing that *all* our thinking is both categorical and hypothetical, categorical *qua* sensory and hypothetical *qua* intellectual, *i.e.,* hypothetical, so far as reorganizing sensory experience in terms of intellectual patterns and standards (*cf.* esp. Bradley's *Principles,* Ch. II). It rests further, in principle, upon the treatment, common to all characteristically "modern" logicians, of the rudimentary attempts at judgment—*e.g.,* leaping uncritically to conclusions—as belonging essentially to the infra-logical stage.

3. Dr. Hicks thinks I succeed "in banishing elementary judgments only by enveloping them in metaphysical mist," and challenges my authority among my "masters" for stating that "contact with reality is an ideal" (p. 497). To this I answer that if Dr. Hicks will glance over Bk. I. of Lotze's *Logic* he will find that Lotze regards the attempt characteristic of logical judgment to be, to seek for *grounded* thought, and that the attempt starts with superficial sensory judgments, and proceeds continuously without stop until it concludes in metaphysics. So too in ch. V. of Sigwart's *Logic,* he will find that the function of logical thinking consists largely in checking the naïve confidence which expresses itself in *S is P* affirmations, until the judgment has been adequately grounded and the hypothesis verified. If he will look over Bradley's *Principles, passim,* he will similarly discover, not only that logical thinking constructs floating adjectives and seeks to attach them, by successive

[10] *Cf. Intro. to Mod. Logic,* pp. 38–44, 46–53, 55–64, *etc.* The term "experiential" is justified, not only by the usage of Erdmann, but also by Aristotle's well-known account of ἐμπειρία.

stages, to Reality, and is working towards a final (metaphysical) judgment of individuality, but also that a profound note of skepticism pervades the entire work. Similarly, Bosanquet's view of judgment as "the effort of thought to define reality" leads steadily, step by step, and pointing beyond itself at each step, to the final judgment of Omniscience. So, too, in so universally read a work as Part III. of Creighton's *Logic,* he will find the stages of judgment to be from simple sensory judgments of quality to the final judgment of "individuality." It is perhaps unnecessary to continue to pile up a list of "authorities," as the view is plainly characteristic of the attempt to realize the vast programme of modern science, in which each new discovery is regarded as of provisional and hypothetical character, subject to revision as knowledge advances, and in no sense to be regarded as final.

4. Dr. Hicks argues that judgments are not all "man-made," on the ground that "the real compels our thought" and that we have to think as reality dictates (p. 497). I answer that, in a sense, that is true, but the whole question is, in *what* sense? As I understand it, while we are, of course, always in *some* contact with reality, we are not always, or even usually, in valuable contact. Our contact tends to be superficial, misleading, unsatisfactory for scientific purposes. We do not know immediately, in the form of *S is P* judgments, what reality is. Our problem is, precisely, to find out by the trial-and-error method, introducing mental patterns, mind-made entities such as the x and y of simultaneous equations, into our thought-processes, so as to raise the level of our thinking from vague and unstandardized feelings to standardized, clear-cut judgments. It is thus in a very real and important sense that the consecutive hypotheses with which we approach the concrete situation can be regarded as "mind-made." The modern epistemological logic is precisely the logic involved in this formation and verification of mental models.

5. Finally, Dr. Hicks criticizes me (*passim*) for excluding spontaneity from modern logic in my zeal for critical thinking. "The tree of knowledge is rooted in spontaneous judgments" (p. 498). I answer that I am not quite clear in what sense Dr. Hicks uses the term "spontaneity." Surely, all thought is spontaneous, and we, its carriers and agents, at best, only follow it whithersoever it may lead. But two main senses can be distinguished. (1) We can restrict the term to the subconscious, in F. W. H. Myers's sense of that term, according to which instinctive impulses, emotions, obscure intimations of all sorts, "well up spontaneously from the depths of our nature." It would be idle to attempt to deny the existence of powerful, if obscure, motives which, arising from

this source, influence and largely assume direction of our thought. But is not this source often poisoned, giving rise (as Freud, Jung, *et al.*, have shown *ad nauseam*) to unworthy prejudices, freakish and fallacious assumptions, idle fancies, and dangerous longings? On the other hand (2) the cool, intelligent weighing of evidence, the critical control of impulsive tendencies of all kinds until they have satisfied our tests for rationality—is not this also to be called "spontaneous," a matter of self-direction? Before the question, which of the two selves, (*a*) the instinctive, subconscious, animal self, or (*b*) the rational, critically self-conscious, human self, the logician should prefer, there can surely be no hesitation. All the armory of logic, its whole *raison d'être* as a philosophical discipline, is surely intended for one main purpose, and for one main purpose alone: to aid us in our fight for control over forces within as well as without, and to fit us for living the life of cool reason, the life of deliberate, self-knowing and self-directing activity, the life of idealized will rather than of brute instinct and mechanical habit, the life of the "higher" or rational self. The study of the obscure spirits which lurk in the subconscious, belongs, not to logic, but to psychology, and is relegated to that science by the unanimous voice of modern logicians.

RUPERT CLENDON LODGE.

UNIVERSITY OF MANITOBA.

EDDINGTON ON EINSTEIN

LAST fall when the news that the British eclipse expeditions had confirmed Einstein's law of gravitation sent curious Americans scurrying to their Carnegies, they found that there was only one book in English giving an adequate account of the theory in its generalized form and that very few copies of this had come to America. This much demanded volume was Professor Eddington's *Report on the Relativity Theory of Gravitation* published by the Fleetway Press for the Physical Society of London in 1918. The Cambridge Professor of Astronomy was a member of the expedition which was sent to the island of Principe in the bight of Africa to observe the eclipse of May 29, for the express purpose of ascertaining if the deflection of starlight predicted by Einstein took place. The plates taken in Africa and South America showed a deviation of the images of seven stars corresponding closely with those calculated from the theory and when Professor Eddington and his associates so reported to the joint session of the Royal and Astronomical Societies on November 6 it was declared by the Presi-

dent to be "one of the most momentous, if not the most momentous, pronouncements of human thought." A month later Professor Eddington gave a talk at Trinity College and one might have thought that a new play was opening for the cue of dons and undergraduates stretched half way across the Great Court while inside the dining hall there was "standing room only." In our country we have the amazing spectacle of "Einstein books," published hastily to meet the popular demand, stacked up on the quick sales counter of the bookstore to an altitude comparable to that of the latest novel.

Professor Eddington, as the foremost champion of *Einsteinismus* in English is pre-eminently qualified to satisfy the curiosity of the general reader as well as the needs of the serious student and his latest book, *Space, Time, and Gravitation,*[1] is excellently adapted to serve both classes. He employs mathematical formulæ as far as necessary, yet the non-mathematical reader can pick his way through the volume, as on stepping stones across a creek, on the paragraphs of summary or illustration that he understands better or thinks he does. The author, unlike some authorities, does not shy off from the sensational aspects of the theory of relativity. On the contrary he obviously takes delight in playing up its paradoxes. Sir Oliver Lodge, who as an adherent of the ether is antagonistic to the new notions, said in discussing Professor Eddington's address before the Royal Astronomical Society that one of the things which astonished him most about it was that Professor Eddington thought that he understood it.

What particularly puzzled Sir Oliver Lodge was the proposed replacement of the straight line as the path of a freely moving body by the "geodesic" which is the longest distance between two points. As Professor Eddington expresses it in his lecture, the earth in passing from the point it occupied a hundred years ago to the point it occupies now might have done it in no time, as judged by those traveling on it. For the earth might have cruised around with the velocity of light and turned up at its present point with its clocks at the same hour and its people at the same age. "But the earth did not do that. It was bound by the rules and the rule of the great trade union of matter is that the longest possible time must be taken over any job." So the earth pursues a leisurely spiral—"a circle in space drawn out into a spiral by continuous displacement in time. Any other course would have had a shorter interval length" (page 72). Or to give the law of motion its general expression: "Every particle moves so as to take the track of

[1] Cambridge University Press, 1920.

greatest interval-length between two events, except in so far as it is disturbed by impacts of other particles or electrical forces." There are any number of "shortest" paths; there is only one of the maximum interval-length through time and space. Einstein deduces the laws of motion from his law of gravitation. In Newton's theory there is no apparent connection. Einstein deals solely with the *course* of a gravitating body; he is not concerned with a hypothetical "force" of gravitation. Gravitational force is no more "real" than centrifugal force, since either may be annulled by choosing a suitable standard observer.

The presence of matter in space necessitates a non-Euclidean geometry for its measurements. This curvature of the empty space of a gravitational field can be calculated and might be measured if our instruments were exact enough. For instance if a massive particle is placed at the center of a circle the ratio of the circumference to the diameter would be a little less than π. "If the mass of a ton were placed inside a circle of 5 yards radius, the defect in the value of π would appear only in the twenty-fourth or twenty-fifth place of decimals" (page 104).

Although this curvature or "hummock" produced by matter can not be measured directly, it can be found indirectly by observation of the path of a planet, or of a ray of light near the sun. The author sums up his exposition of gravitation in these words:

> The simplest type of hummock with this limited curvature has been investigated. It has a kind of infinite chimney at the summit, which we must suppose cut out and filled up with a region where this law is not obeyed, *i.e.*, with a particle of matter.
>
> The tracks of the geodesics on the hummock are such as to give a very close accordance with the tracks computed by Newton's law of gravitation. The slight differences from the Newtonian law have been experimentally verified by the motion of Mercury and the deflection of light.
>
> The hummock might more properly be described as a ridge extending linearly. Since the interval-length along it is real or time-like, the ridge can be taken as a time-direction. Matter has thus a continued existence in time. . . .
>
> The laws of conservation of energy and momentum in mechanics can be deduced from this law of world-curvature.[2]

The student of philosophy and psychology rather than of scientific methods will turn with most eagerness to the final chapter wherein Professor Eddington discusses the speculative aspects of the relative theory. He gives this chapter the Lucretian title: "On the Nature of Things," and endeavors to forestall ridicule by quoting from *Midsummer Night's Dream:*

> *Hippolyta.* This is the silliest stuff that ever I heard.
>
> *Theseus.* The best in this kind are but shadows; and the worst are no worse, if imagination amend them.

[2] P. 151.

Here is his idea of the trend of the relativity theory:

> This is how our theory now stands. We have a world of point-events with their primary interval-relations. Out of these an unlimited number of more complicated relations and qualities can be built up mathematically, describing various features of the state of the world. These exist in nature in the same sense as an unlimited number of walks exist on an open moor. But the existence is, as it were, latent unless some one gives a significance to the walk by following it; and in the same way the existence of any one of these qualities of the world only acquires significance above its fellows, if a mind singles it out for recognition. Mind filters out matter from the meaningless jumble of qualities, as the prism filters out the colors of the rainbow from the chaotic pulsations of white light. Mind exalts the permanent and ignores the transitory; and it appears from the mathematical study of relations that the only way in which mind can achieve her object is by picking out one particular quality as the permanent substance of the perceptual world, partitioning a perceptual time and space for it to be permanent in, and, as a necessary consequence of this Hobson's choice, the laws of gravitation and mechanics and geometry have to be obeyed. Is it too much to say that mind's search for permanence has created the world of physics? So that the world we perceive around us could scarcely have been other than it is? . . . The conclusion is that the whole of those laws of nature which have been woven into a unified scheme—mechanics, gravitation, electro-dynamics and optics—have their origin, not in any special mechanism of nature, but in the workings of the mind.
>
> "Give me matter and motion," said Descartes, "and I will construct the universe." The mind reverses this. "Give me a world—a world in which there are relations—and I will construct matter and motion." . . .
>
> We have found a strange foot-print on the shores of the unknown. We have devised profound theories, one after another, to account for its origin. At last, we have succeeded in reconstructing the creature that made the foot-print. And lo! it is our own.[3]

Some mathematicians and physicists have manifested impatience at the impertinent curiosity of the public and declare that Einstein's theory concerns only themselves, and whatever they may decide to do with it can have no possible effect upon anybody's religion, philosophy or view of life. But the public knows better. And Professor Eddington agrees with the majority on this question. Galileo, Newton and Darwin were specialists, speculating in fields remote from common life, yet they have revolutionized the thought and altered the conduct of the world. Einstein's theory is even more fundamental and unconventional and if it is verified by experiment or genrally adopted as a working hypothesis it will be found in the course of time to have a profound influence upon the minds of men outside of the realm of science.

EDWIN E. SLOSSON.

COLUMBIA UNIVERSITY.

[3] P. 201.

REVIEWS AND ABSTRACTS OF LITERATURE

Implication and Linear Inference. BERNARD BOSANQUET. London and New York: Macmillan and Company. 1920. Pp. viii + 180.

In this book Dr. Bosanquet has undertaken, as he tells us, "to develop and elucidate the non-syllogistic principle" on which his *Logic* was founded. In doing this, he has brought his views on a number of fundamental logical questions into relation with those of certain other contemporary and recent writers, and thus given additional significance and interest to the present discussion. The book is the outcome of Dr. Bosanquet's long and fruitful occupation with this subject, and contains in clear and pointed form some of the more important logical doctrines at which he has arrived. It would be difficult to find anywhere within the same compass a treatment of inference so complete and philosophical. The discussions of the character of the true *a priori* (p. 94 *et passim*), of "logic and the study of the mind" (Chap. VII.), and of the relation of "Judgment and Supposition" (Chap. VIII.) are characterized by the insight and grasp that come from a well-examined and coherent view of the mind and its experiences.

It is true, I think, that readers who are familiar with Dr. Bosanquet's *Logic* as well as with his treatment of logical questions in his Gifford Lectures will find nothing in this volume that is substantially new in principle. But the author's logical principles here gain a new emphasis and perspective by being brought to bear upon the problems indicated by the title, and also by the illustration and support they receive from the many illuminating examples of various concrete types of reasoning which are examined in the course of the argument. One thus comes to feel to a remarkable degree the solid ground of experience beneath one's feet, and is made to realize anew that logical principles do not have their reality in an abstract realm apart, but are nothing but the expression of the movement and life of the mind. "Truth, in short, is not merely an antecedent framework, but a spirit and a function" (p. 163).

"Inference," Dr. Bosanquet tells us, "includes *prima facie* every process by which knowledge extends itself. When, by reason of one or more things you know, you believe yourself to have arrived at the knowledge of something further, you claim to have effected an inference" (p. 2). And it is impossible to doubt that we are in possession of some knowledge, that there is nothing true. "It is agreed in principle that we possess a province of assertion on the whole justified, which we call truth. . . . Thus it would seem to be a natural assumption that in establishing the details of our knowledge we

transfer the character of certainty which we primarily recognize in the provinces of truth as a whole, to the several matters which we progressively establish within it. And a general consideration which merely embodies this presumption might be rendered by some such formula as 'This is nothing.' The essence of an inference then would be in showing of any suggested assertion that unless we accepted it, our province of truth would as a whole be taken from us" (p. 3).

In developing this view of systematic inference the author is accordingly able to contrast his position both with the traditional view of the syllogism as maintained by formal logic at its worst, and with the standpoint of its opponents who attack it from the empirical point of view. Moreover, he is able to show convincingly that there is no distinction between these two views in fundamental principle: both proceed to a conclusion by means of "linear inference." As opposed to this, the true method of inference is through recognizing the "implications" of the system in which we find ourselves. The starting-point of inference is thus neither a general principle nor sense-data in the form of instances, but it proceeds from within a whole or system already apprehended as such. Two things are essential: concrete knowledge of the subject matter and some insight into the form or principle of the whole. Both the formal syllogism and the type of induction that depends upon enumeration of particular instances fail to conform to these requirements; the one by attempting to operate with the abstract form as sole principle, and the other by abandoning the lead of any kind of a principle and contenting itself in the end with a simple whole of enumeration. As Dr. Bosanquet points out, in neither of these methods of procedure do the extremes interpenetrate each other: they are both linear in that they simply go up or down and do not carry their starting-point with them in such a way as to transform the conclusion. Whether we go up or down the result is the same: there is no determination of one extreme by the other and, accordingly, no attainment of genuine rationality in the result.

If the reader is not already familiar with Dr. Bosanquet's thought and method of writing, there is danger that he may fail to appreciate the range and significance of the arguments set down here in such a condensed form. The theory of the *a priori*, to which I have already referred, follows as a consequence of the view of systematic inference in accordance with the principle of Implication. The author's Gifford Lectures of several years ago set forth the same interesting corollary upon which he here lays emphasis, *viz.*, that the parts of our knowledge that are really necessary and self-evident

do not exist as isolated formal propositions, but constitute whole concrete systems or aspects of our experience, such as art, or religion, or philosophy. I can mention only one other topic discussed in this most compact volume. As is well known, a great deal of discussion has gone on in regard to the relation of Logic and Psychology. In the years before the war there raged, especially in Germany, a sharp controversy in which the party names were *Psychologismus* and *Logismus*. It would be too much to claim that the question has been in any sense settled by the careful analysis of Dr. Bosanquet's chapter, but it seems to the reviewer to contribute greatly toward the clearing up of ideas on this subject and to furnish a new starting-point for the discussion of this most fundamental problem.

Bacon has said that some books are to be tasted, others to be swallowed, and some few to be chewed and digested. This book belongs by good right in the last mentioned class.

J. E. CREIGHTON.

CORNELL UNIVERSITY.

Imagination and Its Place in Education. E. A. KIRKPATRICK. Boston: Ginn and Company. 1920. Pp. 214.

"This power of viewing the absent as though it were present . . . is imagination." The book has three parts. Part I., "Imagination and Related Activities," is a review of current conceptions about mental images, association, memory, dreaming, and the relationship of feeling and of reasoning to imagination. Part II., "The Imaginative Life of Children," gives descriptive accounts of children's plays and day-dreams. There is also a discussion of the characteristics of imagination at different ages. Part III., "School Subjects and the Imagination," includes comments on the use of imagination in reading, spelling, drawing, arithmetic, *etc.*

The book is readable and straightforward, and is one that a student ought to grasp without much supplementary explanation. Some of the exercises at the end of the chapters, however, seem too large to be handled by the type of student for whom the text is designed. For example, the question on p. 166, "Does practise in using the creative imagination in one line increase originality in all lines? Give proofs." The book as a whole should prove useful and stimulating.

K. GORDON.

CARNEGIE INSTITUTE OF TECHNOLOGY.

JOURNALS AND NEW BOOKS

JOURNAL OF EDUCATIONAL PSYCHOLOGY. January, 1920. *The Translation Method of Teaching Latin* (pp. 1–15): W. H. FLETCHER. – An examination of the curriculum of junior high schools located in different sections of the country reveals a striking similarity of purpose on the part of administrators. The results of the translation method showed that the interest of the class is maintained at the highest pitch, the pupils like to translate Latin, and they like to study Latin. *The Psychology of Riddle Solution* (pp. 16–33): THOMAS RUSSELL GARTH. – An experiment was conducted with riddles. The writer concludes that one must believe in the trial-and-error character of the method employed in riddles solutions. Speedy guessing tends, as thus objectively determined, to militate against successful guessing. *An Inquiry into the Statistical Basis of a Conclusion Concerning Sex Differences* (pp. 34–38): GEORGE W. FRAZIER. – In 1915 Yerkes, Bridges and Hardwick published a monograph explaining the derivation and standardization of A Point Scale for Measuring Mental Ability. They were convinced that their data showed some pronounced sex differences. Two very interesting statistical points are involved in the method by which their conclusion was reached: (1) the wisdom of using the mode as a measure of central tendency and (2) the validity of conclusions drawn on so few data. The present writer gives tables showing no pronounced sex differences. Is it fair to make conclusions concerning general differences in mental ability, as judged by the point scale, on the basis of a 3.1 difference in arithmetical mean? Is the point scale method so refined that one can be sure that the P.E. might not be greater than any of the above differences? The second point concerning the statistical basis of the conclusions we are dealing with has to do with the number of cases considered. The authors were evidently justified in making their conclusions on the basis of the arrangement of the data as given in the monograph and were also conscious of the limited number of cases considered, but it appears from the rearrangement of the data that no differences between the sexes as great as indicated by Yerkes exists. *Communications and Discussions: Age-Grade Distribution and Intelligence Quotient:* ALLEN J. WILLIAMS. – A discussion following Supt. Witham's article in the *Journal* for November, 1919. *Editorial. News and Notes. Publications Received.*

Dunning, William Archibald. A History of Political Theories, from Rousseau to Spencer. New York: Macmillan Co. 1920. Pp. 446.

Langfeld, Herbert Sidney. The Æsthetic Attitude. New York: Harcourt, Brace & Howe. 1920. Pp. xi + 287.

Merriam, Charles Edward. American Political Ideas: Studies in the Development of American Political Thought, 1865–1917. New York: Macmillan Co. 1920. Pp. 480.

Parker, DeWitt H. The Principles of Æsthetics. Boston: Silver, Burdett & Co. 1920. Pp. 380.

NOTES AND NEWS

ANNOUNCEMENT is made of the establishment of an Institute of Politics at Williamstown, Mass., during the summer months. This project was first undertaken by Williams College in 1913, but the plans for it had to be suspended during the war. Now, through the kindness of an unnamed benefactor, funds have been provided to carry on the work for three years, so that it will be possible to hold the first session this summer. The object of the institute is to advance the study of politics and to promote a better understanding of international relations. The subject chosen for this year's session is "International Relations." It will be treated in its historical, political, industrial, commercial and institutional phases. The work will be carried on by lectures given by men of national and international distinction, and by classes and round-table conferences conducted by professors from American colleges and universities. In addition, every facility will be offered for research, as a special library is being collected for this purpose. The lectures will be open to the public, but the classes and round-table discussions may be attended only by regularly registered members of the institute. Membership is limited to members of the faculties of colleges and universities and to those to whom, by reason of special training and experience in the field of politics, invitations will be sent. President Harry Augustus Garfield, of Williams College is the Chairman of the Administrative Board. The Board of Advisors is composed of the following members: Professor William Howard Taft, of Yale; Professor Archibald Cary Coolidge, of Harvard; Professor Philip Marshall Brown, of Princeton; Professor John Bassett Moore, of Columbia; President Edwin Anderson Alderman, of the University of Virginia; Professor Jesse Siddal Reeves, of the University of Michigan; President Edward Asahel Birge, of the University of Wisconsin; Professor Westel Woodbury Willoughby, of Johns Hopkins; President Harry Pratt Judson, of the University of Chicago, and Dr. James Brown Scott, Secretary of the Carnegie Endowment for International Peace.